1.   An anisotropic polymer layer exhibiting a tilted structure with an optical axis having a tilt angle θ relative to the plane of the layer, obtained by polymerizing a polymerizable mesogenic material comprising at least one compound of the formula:

P-(Sp-X)$_n$-MG-R   I

wherein

P   is a polymerizable group,

Sp   is a spacer group having 1 to 20 C atoms,

X   is a group of -O-, -S-, -CO-, -COO-, -OCO-, -OCOO- or a single bond,

n   is 0 or 1,

MG   is a mesogenic or mesogenicity supporting group:

and

R   is an alkyl radical with up to 25 C atoms optionally unsubstituted, mono- or polysubstituted by halogen or CN, optionally one or more non-adjacent CH$_2$ groups are replaced, independently, by -O-, -S-, -NH-, -N(CH$_3$)-, -CO-,

-COO-, -OCO-, -OCO-O-, -S-CO-, -CO-S- or -C≡C- where oxygen atoms are not linked directly to one another, or R is halogen, cyano or, independently, P-(Sp-X)$_n$- as defined in formula I;

wherein the polymerizable mesogenic material is a mixture of:

a1)   10 to 99% by weight of at least one mesogen according to formula I having one polymerizable functional group,

a2)   0 to 70% by weight of at least one mesogen according to formula I having two or more polymerizable functional groups, and

b)   0.01 to 5% by weight of an initiator.

2.   A polymer layer according to claim 1, wherein the polymerizable material comprises at least one compound of formula I having one polymerizable group and at least one compound of formula I having two polymerizable groups.

3.   A polymer layer according to claim 1, wherein the polymerizable material comprises at least one compound of formula I wherein the mesogenic group MG is of the formulae:

;
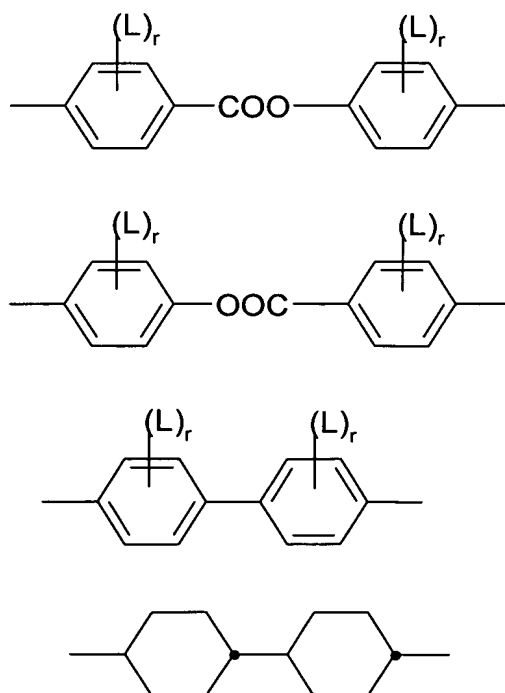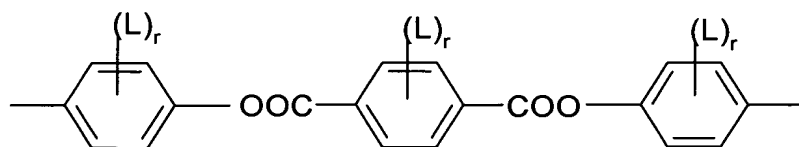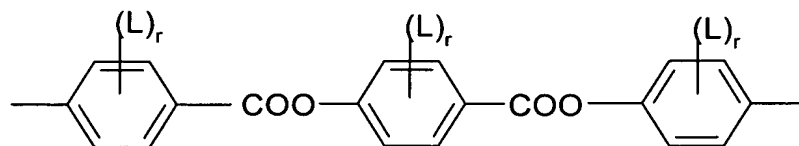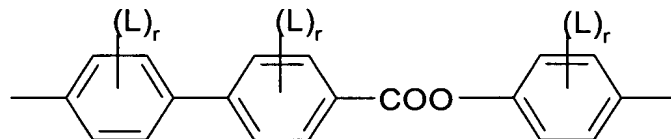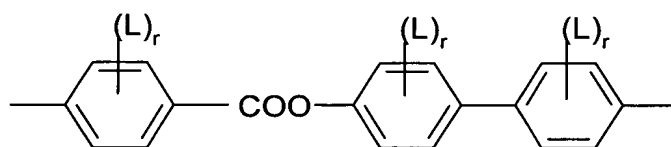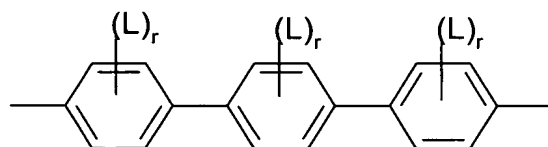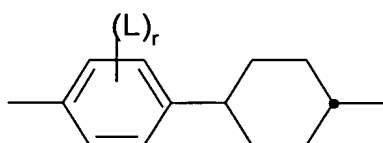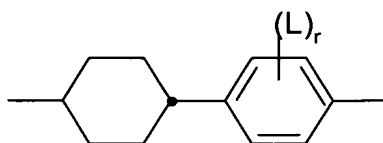
or

;

where L is: F, Cl, CN, or a fluorinated alkyl, alkoxy or alkanoyl group with 1 to 4 C atoms,
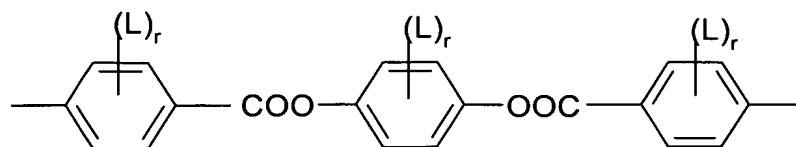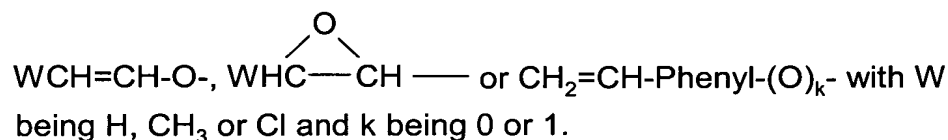
and

r is 0, 1 or 2.

4. A polymer layer according to claim 1, wherein the polymerizable material comprises at least one compound of formula I where P is:

$$CH_2=CW-COO-,$$

$$WCH=CH-O-, \quad WHC\overset{O}{\overbrace{}}CH \quad \text{—— or } CH_2=CH\text{-Phenyl-}(O)_k\text{- with W}$$
being H, CH_3 or Cl and k being 0 or 1.

5. A polymer layer according to claim 1, wherein the polymerizable mesogenic material comprises at least one compound of the formulae:

$$CH_2=CHCOO(CH_2)_xO-\!\!\bigcirc\!\!-COO-\!\!\overset{L^1\quad L^2}{\bigcirc}\!\!-OCO-\!\!\bigcirc\!\!-O(CH_2)_yOOCCH=CH_2$$

$$CH_2=CHCOO(CH_2)_xO-\!\!\bigcirc\!\!-COO-\!\!\bigcirc\!\!\!\!\!A\!\!\!\!\!-R^1$$

$$CH_2=CHCOO(CH_2)_xO-\!\!\bigcirc\!\!-COO-\!\!\bigcirc\!\!-\!\!\bigcirc\!\!\!\!\!A\!\!\!\!\!-R^1$$

$$CH_2=CHCOO(CH_2)_xO-\!\!\bigcirc\!\!-\!\!\bigcirc\!\!-R^1$$

$$CH_2=CHCOO(CH_2)_xO-\!\!\!\langle\,\rangle\!\!\!-COO-\!\!\!\langle\,\rangle\!\!\!-OCO-\!\!\!\langle\,\rangle\!\!\!-R^1$$

with L^1 substituent on the central ring

$$CH_2=CHCOO(CH_2)_xO-\!\!\!\langle\,\rangle\!\!\!-CH=CH-COO-\!\!\!\langle\,\rangle\!\!\!-R^1 \qquad \text{or}$$

$$\overset{O}{\triangle}\!\!-(CH_2)_xO-\!\!\!\langle\,\rangle\!\!\!-COO-\!\!\!\langle\,\rangle\!\!\!-R^1 \qquad ;$$
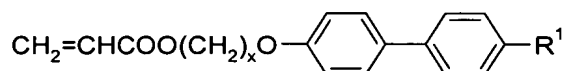
wherein x and y are, independently, 1 to 12, A is a 1,4-phenylene or 1,4-cyclohexylene group, R^1 is halogen, cyano or an optionally halogenated alkyl or alkoxy group with 1 to 12 C atoms, and L^1 and L^2 are, independently, H, F, Cl, CN, or a halogenated alkyl, alkoxy, or alkanoyl group with 1 to 7 C atoms.
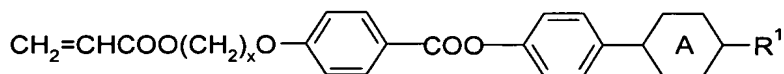
6. A polymer layer according to claim 1, wherein the polymerizable material comprises 1 to 80% by weight of at least one dielectrically positive monoreactive mesogenic compound.

7. A polymer layer according to claim 6, wherein said dielectrically positive monoreactive mesogenic compound has a dielectric anisotropy $\Delta\varepsilon > 1.5$.

8. A polymer layer according to claim 6, wherein said dielectrically positive monoreactive mesogenic compound has a polar terminal group of CN, F, Cl, OCF_3, OCF_2H, OC_2F_5, CF_3, OCN or SCN.
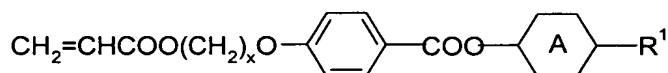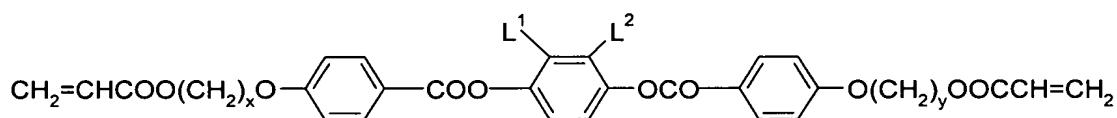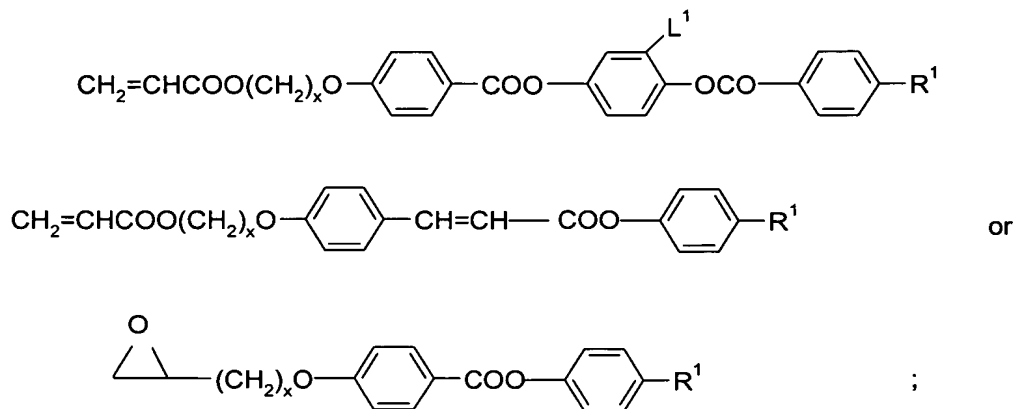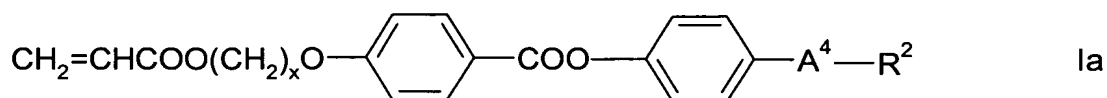
9.   A polymer layer according to claim 1, wherein the polymerizable material comprises at least one compound of the formula:

$$CH_2=CHCOO(CH_2)_xO-\langle\ \rangle-COO-\langle\ \rangle-A^4-R^2 \qquad Ia$$

wherein x is 1 to 12, R^2 is C_{1-12} alkyl or alkoxy, and

A^4 is 1,4-phenylene, trans-1, 4-cyclohexylene or a single bond;

at least one direactive compound of formula I; and at least one dielectrically positive monoreactive compound of formula I.

10.   A polymer layer according to claim 1, wherein the polymerizable mesogenic material is a mixture of:

a1A)   10 to 65%, by weight of at least one compound of formula I having one polymerizable group, wherein R is an alkyl or alkoxy group with 1 to 12 C atoms;

a1B)   5 to 40% by weight of at least one compound of formula I having one polymerizable group, wherein R is CN, F, Cl or a halogenated alkyl or alkoxy group with 1 to 12 C atoms;

a2)   2 to 90% by weight of at least one compound of formula I having two polymerizable groups, wherein R has one of the meanings of $P-(Sp-X-)_n$; and

b)   0.01 to 5 % by weight of an initiator.

11. A polymer layer according to claim 1, wherein the mesogenic or mesogenicity supporting group is a compound of formula:

$$-(A^1-Z^1)_m-A^2-Z^2-A^3- \qquad\qquad II$$

wherein

A^1, A^2 and A^3 are, independently, 1,4-phenylene where one or more CH groups optionally replaced by N, 1,4-cyclohexylene, optionally, one or two non-adjacent CH_2 groups are replaced by O and/or S, 1,4-cyclohexenylene or naphthalene-2, 6-diyl, optionally these groups are unsubstituted, mono- or polysubstituted with a halogen, a cyano, or a nitro group, or an alkyl, alkoxy or alkanoyl group having 1 to 7 C atoms, wherein one or more H atoms may be substituted by F or Cl,

Z^1 and Z^2 are each, independently, -COO-, -OCO-, -CH_2CH_2-, -OCH_2-, -CH_2O-, -CH=CH-, -C≡C-, -CH=CH-COO-, -OCO-CH=CH- or a single bond and

m is 0, 1 or 2.

12. A polymer layer according to claim 1, wherein n=1.

13. A polymer layer according to claim 1, wherein the polymerizable mesogenic material comprises at least 95% by weight of polymerizable compounds.

14. A polymer layer according to claim 1, wherein the tilt angle θ relative to the plane of the layer is greater than 0.

15. A polymer layer according to claim 13, wherein the tilt angle θ relative to the plane of the layer is greater than 0.

16. A polymer layer according to claim 14, wherein the polymerizable mesogenic material comprises at least 95% by weight of polymerizable compounds.

17. Polymer layers comprising an anisotropic polymer layer according to claim 1.